

IN THE CLAIMS:

- 1 1. (Currently Amended) A recoil starter comprising:
- 2 a casing including a reel shaft disposed coaxially with a crankshaft of an engine,
- 3 which crankshaft has a rotating member coupled thereto;
- 4 a rope reel rotatably supported on said reel shaft and provided at an outer
- 5 periphery thereof with a drum portion around which a recoil rope is wound;
- 6 a recoil spring for rotationally urging said rope reel in a direction in which said
- 7 recoil rope is rewound;
- 8 a cam, rotatably supported on said reel shaft, for transmitting a rotation thereof to
- 9 said rotating member via a clutch mechanism; and
- 10 a damper spring, disposed between said rope reel and said cam, for transmitting a
- 11 rotation of said rope reel to said cam using a resilient action, wherein
- 12 annular recesses are formed in mutually opposing joint surfaces of said rope reel
- 13 and said cam, respectively, in a manner to face each other, said damper spring being received in
- 14 said annular recesses while opposite ends of said damper spring are respectively held at said rope
- 15 reel and said cam so that said rope reel and said cam are rotationally coupled together via said
- 16 damper spring;
- 17 said casing includes a side wall having air inlets formed therein for introducing air
- 18 for cooling the engine; and
- 19 said rope reel includes a boss portion which forms the annular recess of said rope
- 20 reel, said rope reel having air passages which are formed between said drum portion and said
- 21 boss portion thereof in such a manner as to face said air inlets formed in said casing, the boss
- 22 portion of the rope reel and the cam have outer walls which form the respective annular recesses

23 and which are located radially inwardly of the air passages and the damper spring comprises a
24 torsion coil spring.

1 2. (Original) The recoil starter according to claim 1, wherein said clutch mechanism
2 for transmitting the rotation of said cam to said rotating member comprises:

3 a cam pawl formed projectingly on an outer peripheral surface of said cam;

4 a drive pulley which constitutes said rotating member and which has a cup form
5 with its one end open, said drive pulley being disposed in such a manner as to cover said cam;
6 and

7 a centrifugal ratchet having one end thereof pivotally supported at an annular
8 flange which is formed on an open end portion of said drive pulley in a manner to project
9 radially outward therefrom, said centrifugal ratchet being provided on the other end thereof with
10 an engaging piece formed to be angled toward the inside of said drive pulley, said centrifugal
11 ratchet being rotationally urged in a direction in which said engaging piece thereof engages with
12 said cam pawl of said cam.

1 3. (New) The recoil starter according to Claim 1 wherein said rope reel air passages
2 are located radially outward from the torsion coil spring to provide an open passageway free
3 from any intrusion by the torsion coil spring.

1 4. (New) The recoil starter according to Claim 1 wherein the casing has an outer
2 convex surface with an inclined annular flange extending from the side wall with ventilation air
3 inlets formed on the annular flange.

1 5. (New) A recoil starter comprising:

2 a casing including a reel shaft disposed coaxially with a crankshaft of an engine,
3 which crankshaft has a rotating member coupled thereto;

4 a rope reel rotatably supported on said reel shaft and provided at an outer
5 periphery thereof with a drum portion around which a recoil rope is wound;

6 a recoil spring for rotationally urging said rope reel in a direction in which said
7 recoil rope is rewound;

8 a cam, rotatably supported on said reel shaft, for transmitting a rotation thereof to
9 said rotating member via a clutch mechanism; and

10 a damper spring, disposed between said rope reel and said cam, for transmitting a
11 rotation of said rope reel to said cam using a resilient action, wherein

12 annular recesses are formed in mutually opposing joint surfaces of said rope reel
13 and said cam, respectively, in a manner to face each other, said damper spring being received in
14 said annular recesses while opposite ends of said damper spring are respectively held at said rope
15 reel and said cam so that said rope reel and said cam are rotationally coupled together via said
16 damper spring;

17 said casing includes a side wall having air inlets formed therein for introducing air
18 for cooling the engine;

19 said rope reel includes a boss portion which forms the annular recess of said rope
20 reel, said rope reel having air passages which are formed between said drum portion and said
21 boss portion thereof in such a manner as to face said air inlets formed in said casing; and

22 a clutch mechanism for transmitting the rotation of said cam to said rotating
23 member including:

24 a cam pawl formed projectingly on an outer peripheral surface of said cam;

25 a drive pulley which constitutes said rotating member and which has a cup form
26 with its one end open, said drive pulley being disposed in such a manner as to cover said cam;
27 and

28 a centrifugal ratchet having one end thereof pivotally supported at an annular
29 flange which is formed on an open end portion of said drive pulley in a manner to project
30 radially outward therefrom, said centrifugal ratchet being provided on the other end thereof with
31 an engaging piece formed to be angled toward the inside of said drive pulley, said centrifugal
32 ratchet being rotationally urged in a direction in which said engaging piece thereof engages with
33 said cam pawl of said cam.

1 6. (New) A recoil starter comprising:

2 a casing including a reel shaft disposed coaxially with a crankshaft of an engine,
3 which crankshaft has a rotating member coupled thereto;

4 a rope reel rotatably supported on said reel shaft and provided at an outer
5 periphery thereof with a drum portion around which a recoil rope is wound;

6 a recoil spring for rotationally urging said rope reel in a direction in which said
7 recoil rope is rewound;

8 a cam, rotatably supported on said reel shaft, for transmitting a rotation thereof to
9 said rotating member via a clutch mechanism;

10 a damper spring, disposed coaxially between said rope reel and said cam, for
11 transmitting a rotation of said rope reel to said cam using a resilient action,

12 said casing includes a side wall having air inlets formed therein for introducing air
13 for cooling the engine;

14 said rope reel includes a boss portion which forms the annular recess of said rope
15 reel, said rope reel having air passages which are formed between said drum portion and said
16 boss portion thereof in such a manner as to face said air inlets formed in said casing;

17 the air passages are positioned radially outward from the damper spring without
18 any blocking of the air passages and air inlets by the damper spring; and

19 a clutch mechanism for transmitting the rotation of said cam to said rotating
20 member including:

21 a cam pawl formed projectingly on an outer peripheral surface of said cam;

22 a drive pulley which constitutes said rotating member and which has a cup form
23 with its one end open, said drive pulley being disposed in such a manner as to cover said cam;
24 and
25 a centrifugal ratchet having one end thereof pivotally supported at an annular
26 flange which is formed on an open end portion of said drive pulley in a manner to project
27 radially outward therefrom, said centrifugal ratchet being provided on the other end thereof with
28 an engaging piece formed to be angled toward the inside of said drive pulley, said centrifugal
29 ratchet being rotationally urged in a direction in which said engaging piece thereof engages with
30 said cam pawl of said cam.